

A remarkable new species of *Diodora* Gray, 1821 from south-east Africa (Mollusca: Gastropoda: Fissurellidae)

by

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ABSTRACT

Diodora procurva sp. n. is described from the continental slope off south-eastern Africa. It is remarkable on account of its large size, elevated profile and procurved apex.

INTRODUCTION

Amongst the undescribed molluscan material collected during the Natal Museum's dredging cruises off the coast of south-eastern Africa is a new species of *Diodora* Gray, 1821, remarkable on account of its size, elevated profile and forward curving apex. It is clearly distinct from other members of the genus and is here described and illustrated. I have not assigned it to any of the presently recognised subgenera of *Diodora* because these have yet to be defined satisfactorily.

SYSTEMATICS

Diodora Gray, 1821

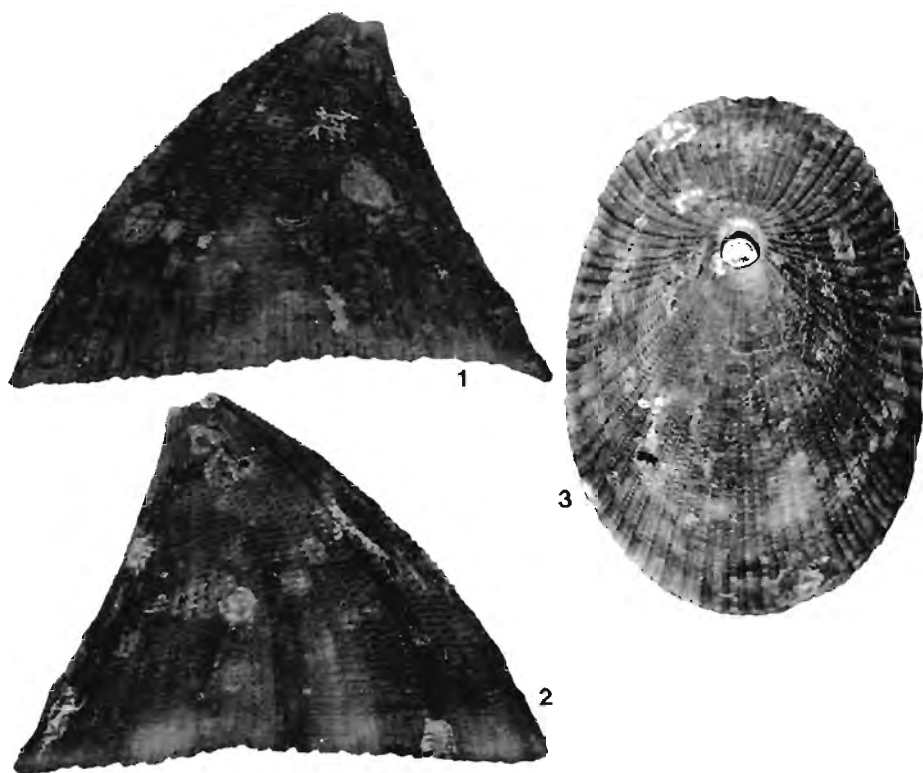
Diodora Gray, 1821: 223, type species (monotypy) *Patella apertura* Montagu, 1803.

Diodora procurva sp. n.

Figs 1–7

Diagnosis: Shell elevated ($h/l = 0,60-0,69$); apex procurved, anterior slope concave; base concave; foramen subcircular, interior callus noticeably truncate posteriorly; sculpture of close-set radial ribs and numerous angular concentric threads, ribs and threads interact to form fine, apically orientated, imbricating scales; cancellate apically, but cancellation becoming obscure towards base. Off-white to pale brown.

Description: Basal shell outline oblong-ovate, broadest halfway between foramen and posterior margin ($w/l = 0,67-0,74$); elevated ($h/l = 0,60-0,69$); apex distinctly procurved in adults (less so in juveniles), situated approximately one third of total length from anterior margin; base concave, shell resting on its ends; anterior slope concave; posterior slope convex. Apical foramen very nearly circular; callus surrounding interior margin of foramen well developed, distinctly truncated posteriorly creating small socket behind foramen (Fig. 7). Sculpture of close-set radial ribs (25–30 primary ribs) and numerous, undulating, concentric threads;



Figs 1-3. *Diodora procurva* sp. n., holotype, 31,4 × 21,8 mm, height 21,7 mm.

early part of shell cancellate, interstices almost square and each containing a single subcircular to oblong-ovate intritacalx pit; pits may appear in pairs when interstices become divided by nascent intermediary ribs. With growth, intervals between ribs become much reduced in width by intercalation of intermediary ribs; intervals much narrower than ribs themselves and cancellation becomes obscured, the interstices appearing as deep punctations. Crests of concentric threads somewhat angled and displaced towards shell apex, threads and ribs interact producing a fine, scale-like granulation; toward basal margin threads appear to overlap one another resulting in an apically directed imbrication (Fig. 6). Growth stages marked by concentric irregularities in sculpture. Interior smooth, evidently glossy when fresh; basal margin crenulated by radial sculpture.

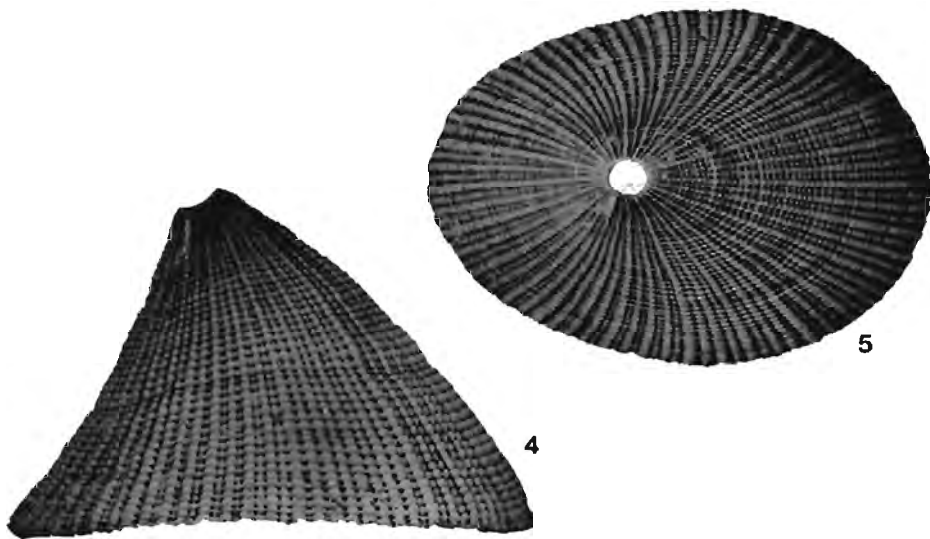
Protoconch: Unknown, lost during early juvenile stage.

Colour: External colour probably very pale greyish or bownish cream when fresh with some evidence of broad, slightly darker, radiating rays (paratypes 3 and 4), but most specimens irregularly mottled with brown stains; interior whitish.

Dimensions: Holotype (largest specimen), 31,4 × 21,8 mm, height 21,7 mm.

Radula and external anatomy: No living material has been found.

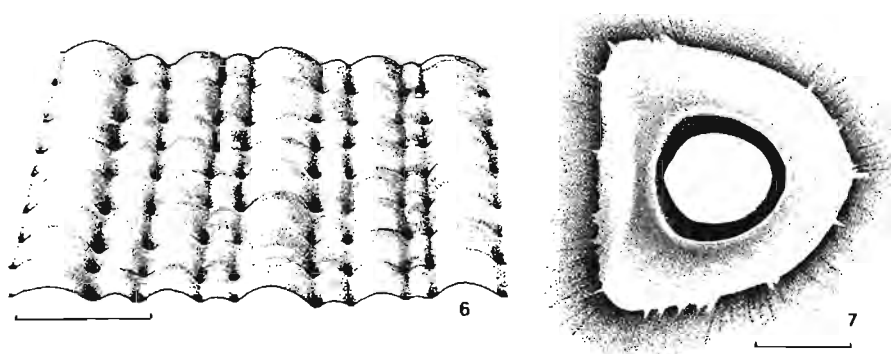
Distribution: South-eastern Africa; southern Zululand to south-western Transkei, 120-510 m.



Figs 4–5. *Diodora procurva* sp. n., paratype 5, coated with magnesium oxide, 27,2 × 18,9 mm, height 17,3 mm. 4, lateral view (left); 5, apical view.

Type material (all dredged R. V. *Meiring Naude*): Holotype, NM E5938/T124, off Mbashe River, Transkei (32°18.2'S:29°04.1'E), 200–220 m, sponge rubble; paratypes 1, 2, NM C1984/T125, same data as holotype; paratype 3, NM C5036/T126, off Ngabara Point, Transkei, 130–150 m, sponges and stylasterids; paratype 4, NM C6310/T128, off Qora River, Transkei, 480–490 m, sandy mud; paratype 5, NM E4598/T127, S.E. of Sheffield Beach, Natal, 180 m, sponge rubble; paratypes 6–10, NM E3970/T129, S.E. of Neill Peak (Cunge), Zululand, 320–340 m, sandy mud.

Additional material: TRANSKEI: off Stony Point, 510 m, mud (NM C6668); NATAL: off Umlaas Canal, Durban, 120–140 m, dredged A. Connell (NM D3454).



Figs 6–7. *Diodora procurva* sp. n. 6, detail of sculpture, drawn from paratype 5, bar = 1,5 mm; 7, interior of apical foramen, drawn from holotype, bar = 2,0 mm.

Remarks: A distinctive species characterised by its large size, elevated proportions, procurved apex and fine imbricating scale-like sculpture. Although none of these features is characteristic in isolation, I can find no currently known species which is similar. *Diodora yaroni* Christiaens, 1987, from the Red Sea, is another elevated species with a procurved apex, but is much smaller and has a different sculpture.

The most similar local species are *D. elevata* (Dunker in Philippi, 1846) and *D. parviforata* (Sowerby, 1889), but neither occur in such deep water. *D. elevata*, despite its name, is rarely if ever of comparable height to *D. procurva*, has a cancellate sculpture throughout and usually has rays of greenish coloration. *D. parviforata* has a somewhat similar sculpture to the present species, but has a much more gibbous profile and never shows a procurved apex. *D. calyculata* (Sowerby, 1823) occasionally shows a weakly procurved apex, but has three strong posterior ribs and is usually reddish in colour.

Etymology: *Procurvus* L. curving forward, referring to the apex.

ABBREVIATIONS

- h/l = height : length ratio.
NM = Natal Museum, Pietermaritzburg.
NRIO = National Research Institute for Oceanology, South Africa.
w/l = width : length ratio.

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REFERENCES

- GRAY, J. E. 1821. A natural arrangement of Mollusca according to their internal structure. *London med. Repos.* 15: 229–239.

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